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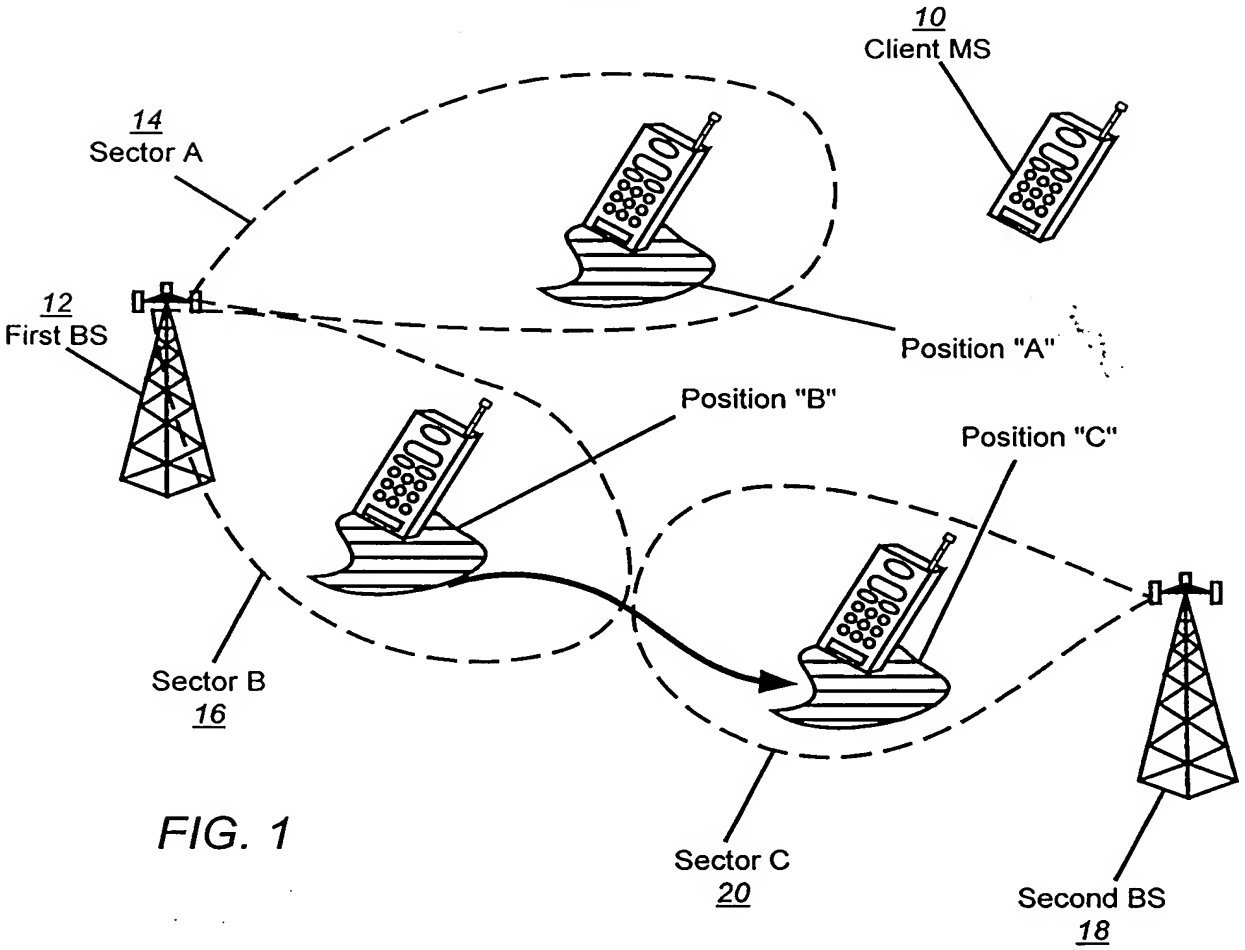
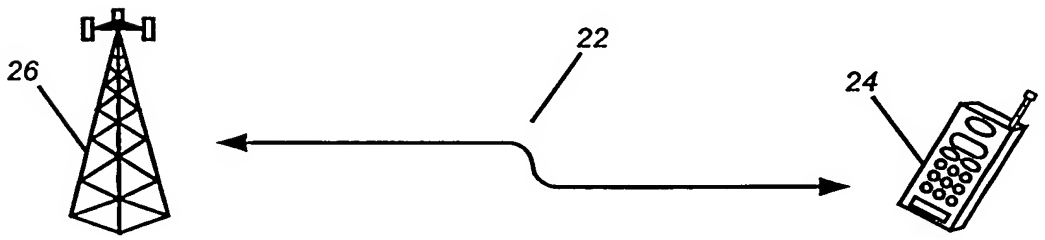


FIG. 1



Forward Link
- Pilot Channel(s)
- Sync Channel
- Paging Channel(s)
- Traffic Channels

Reverse Link
- Control Channel(s)
- Access Channel
- Traffic Channel(s)

FIG. 2

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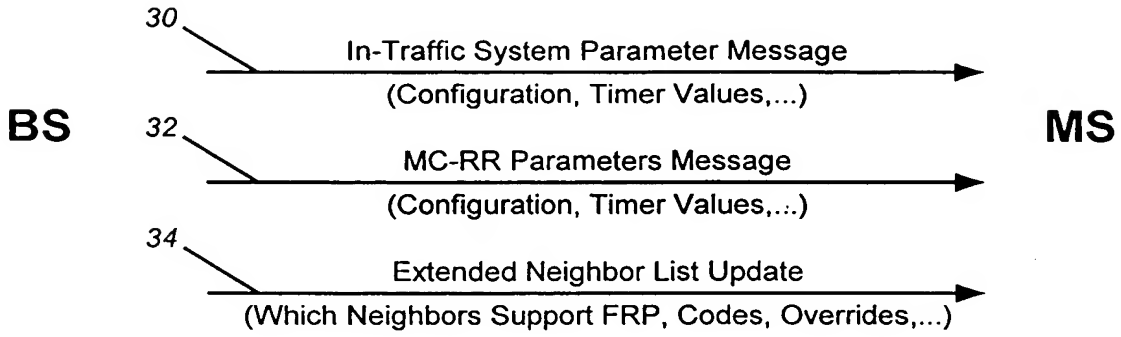

FIG. 3

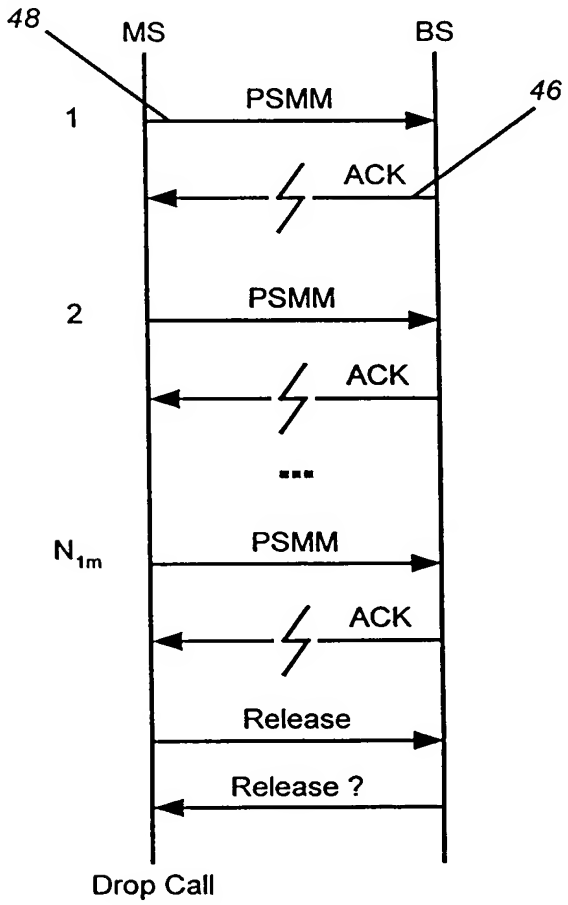

FIG. 5

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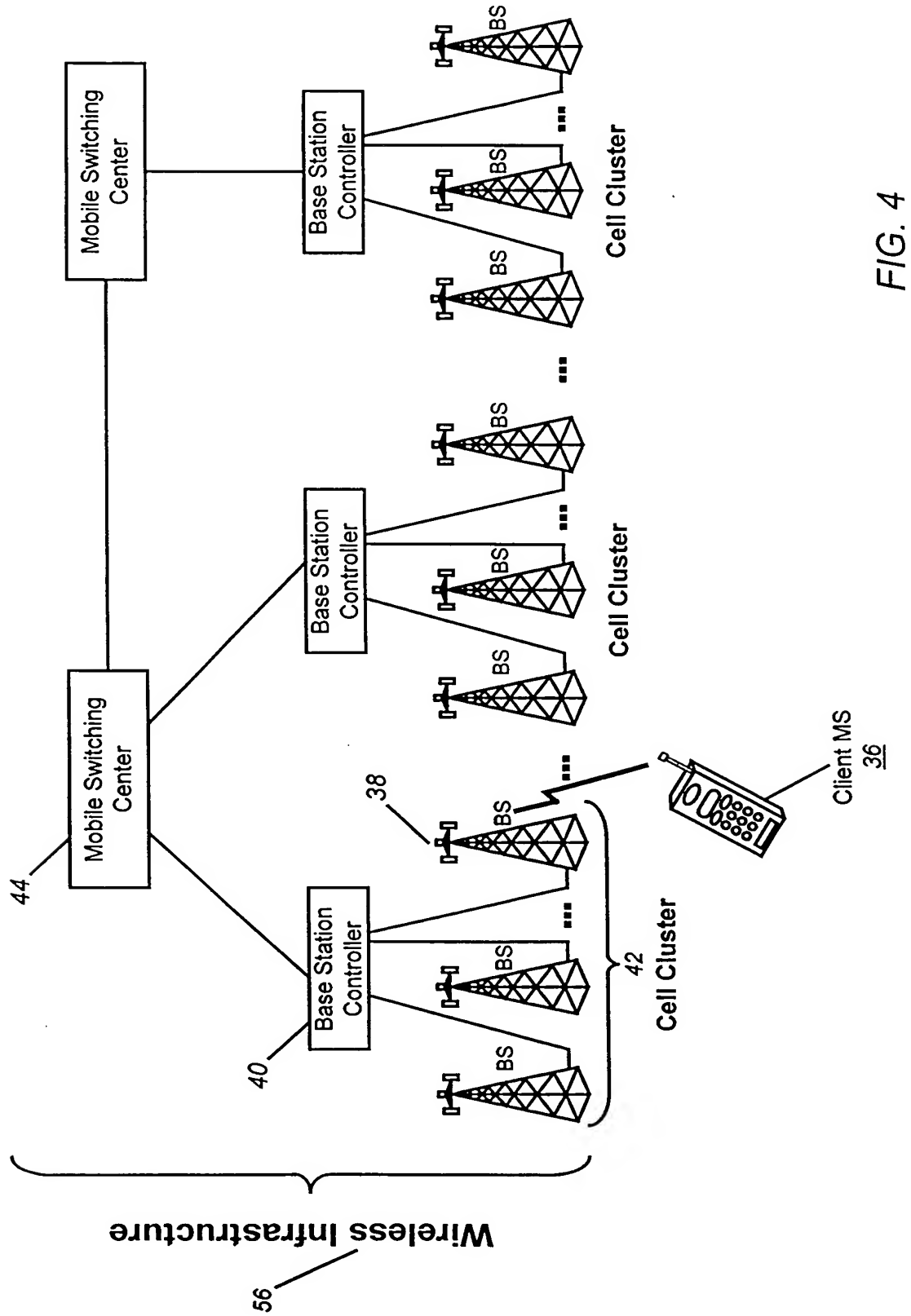
Wireless Infrastructure
56
Mobile Switching Center
44
Mobile Switching Center
Base Station Controller
40
Base Station Controller
Base Station Controller
BS
38
42
Cell Cluster
Cell Cluster
Cell Cluster
Client MS
36

FIG. 4

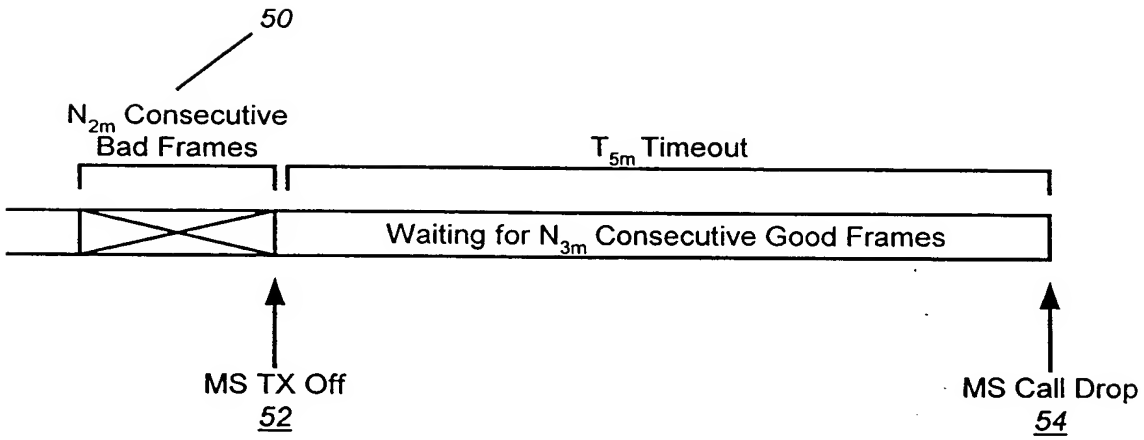
50
N_{2m} Consecutive Bad Frames
T_{5m} Timeout
Waiting for N_{3m} Consecutive Good Frames
MS TX Off
52
MS Call Drop
54

FIG. 6

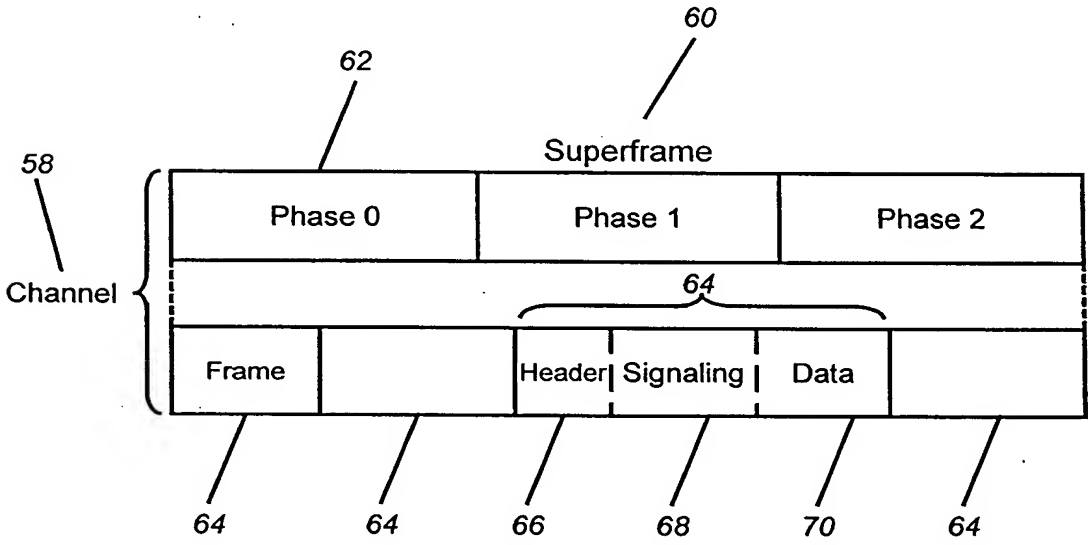
60
62
Superframe
58
Phase 0
Phase 1
Phase 2
Channel
64
Frame
Header
Signaling
Data
64
64
66
68
70
64

FIG. 7

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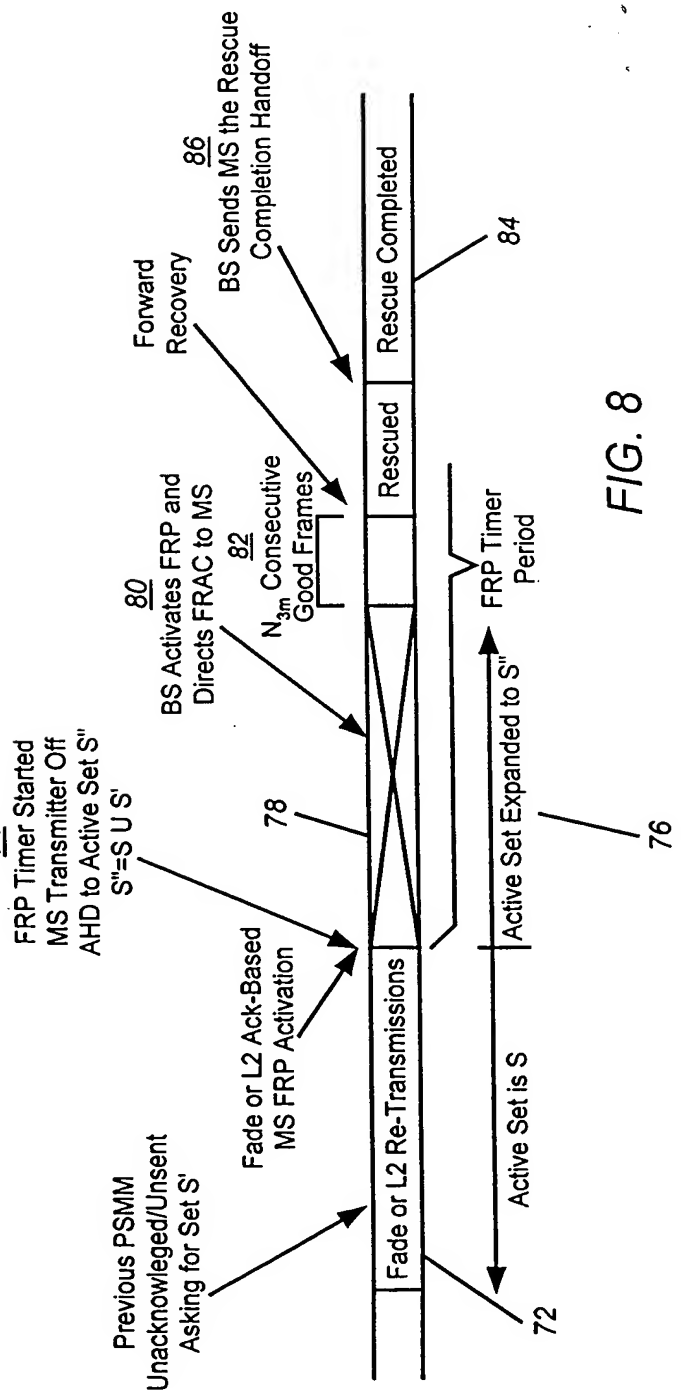
Previous PSMM Unacknowleged/Unsent Asking for Set S'
Fade or L2 Re-Transmissions
72
Fade or L2 Ack-Based MS FRP Activation
74
FRP Timer Started MS Transmitter Off AHD to Active Set S" S"=S U S'
78
80
BS Activates FRP and Directs FRAC to MS
82
N_{3m} Consecutive Good Frames
Rescued
Active Set is S
Active Set Expanded to S"
FRP Timer Period
76
Forward Recovery
86
BS Sends MS the Rescue Completion Handoff
Rescue Completed
84

FIG. 8

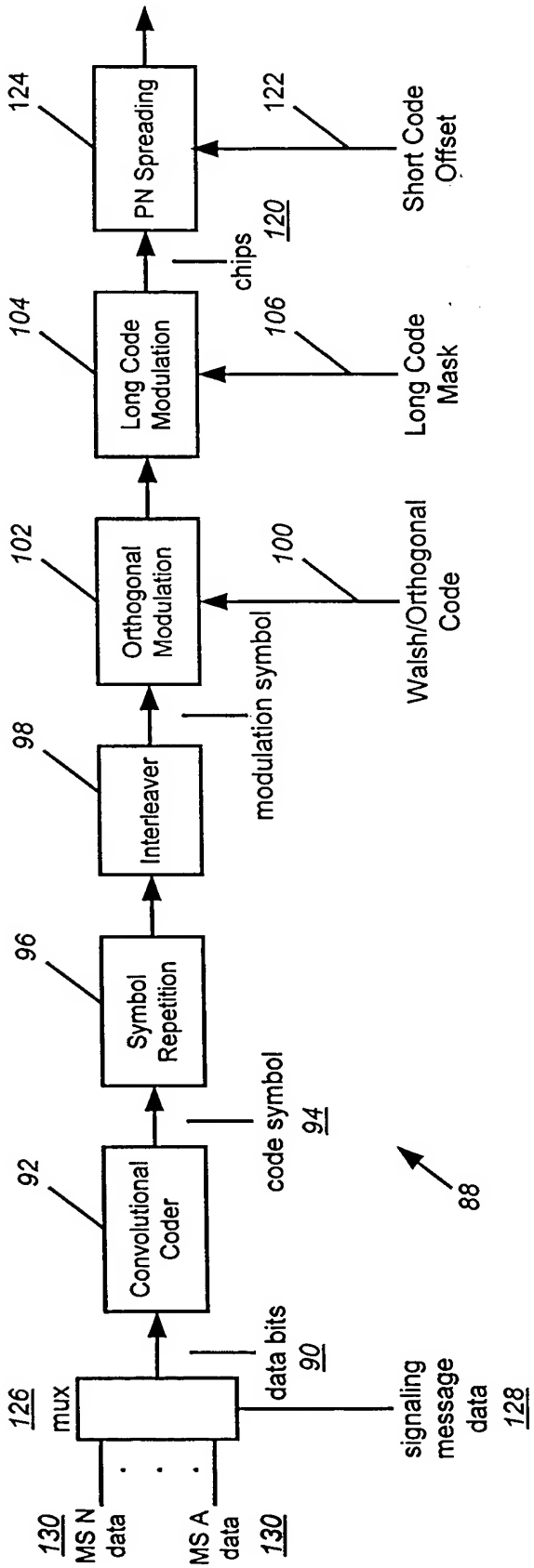
126 mux
130 MS N data
MS A data 130
signaling message data 128
data bits 90
92 Convolutional Coder
code symbol 94
96 Symbol Repetition
98 Interleaver
modulation symbol
102 Orthogonal Modulation
100 Walsh/Orthogonal Code
104 Long Code Modulation
106 Long Code Mask
chips 120
124 PN Spreading
122 Short Code Offset
88

FIG. 9

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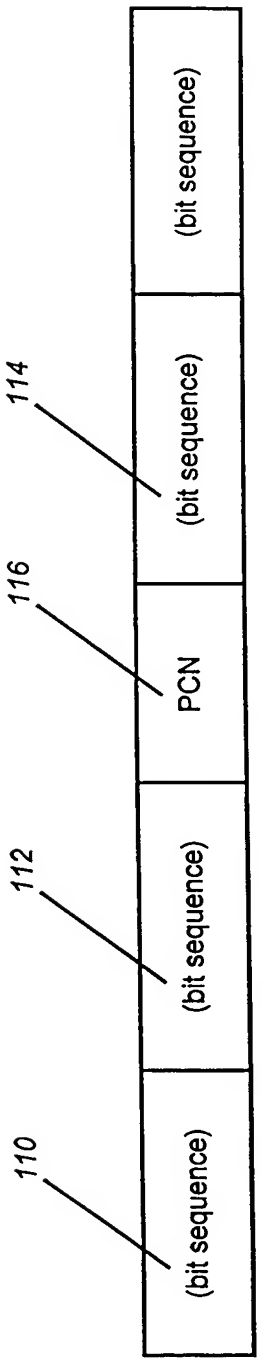
(bit sequence)
(bit sequence)
PCN
(bit sequence)
110
112
116
114
PCN - Paging Channel Number
108
Paging Channel Long Code Mask

FIG. 10

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Field	Length (bits)
SIZE OF MOBILE ADDRESS	*3*
MOBILE COUNTRY CODE (MCC)	*10*
IMSI 11_12 (2 digit# based on IMSI)	*7*
IMSI_S (10 digit# based on IMSI)	*34*
USE_TIME	1
ACTION_TIME	0 or 6
SEQUENCE NUMBER	0 or X
SEARCH PARAMETERS INCLUDED	1
SEARCH PARAMETERS	0 or X
EXTRA PARAMETERS INCLUDED	1
EXTRA PARAMETERS	0 or X
FRAME_OFFSET	0 or 4
PRIVATE_LCM	0 or 1
RESET_L2	0 or 1
SERV_NEG_TYPE	0 or 1
POWER LEVELS	0 or X
BAND_CLASS	0 or 5
CDMA_FREQ	0 or 11
RETURN_IF_HANDOFF_FAIL	0 or 1
NUM_PILOTS	3

FIG. 11

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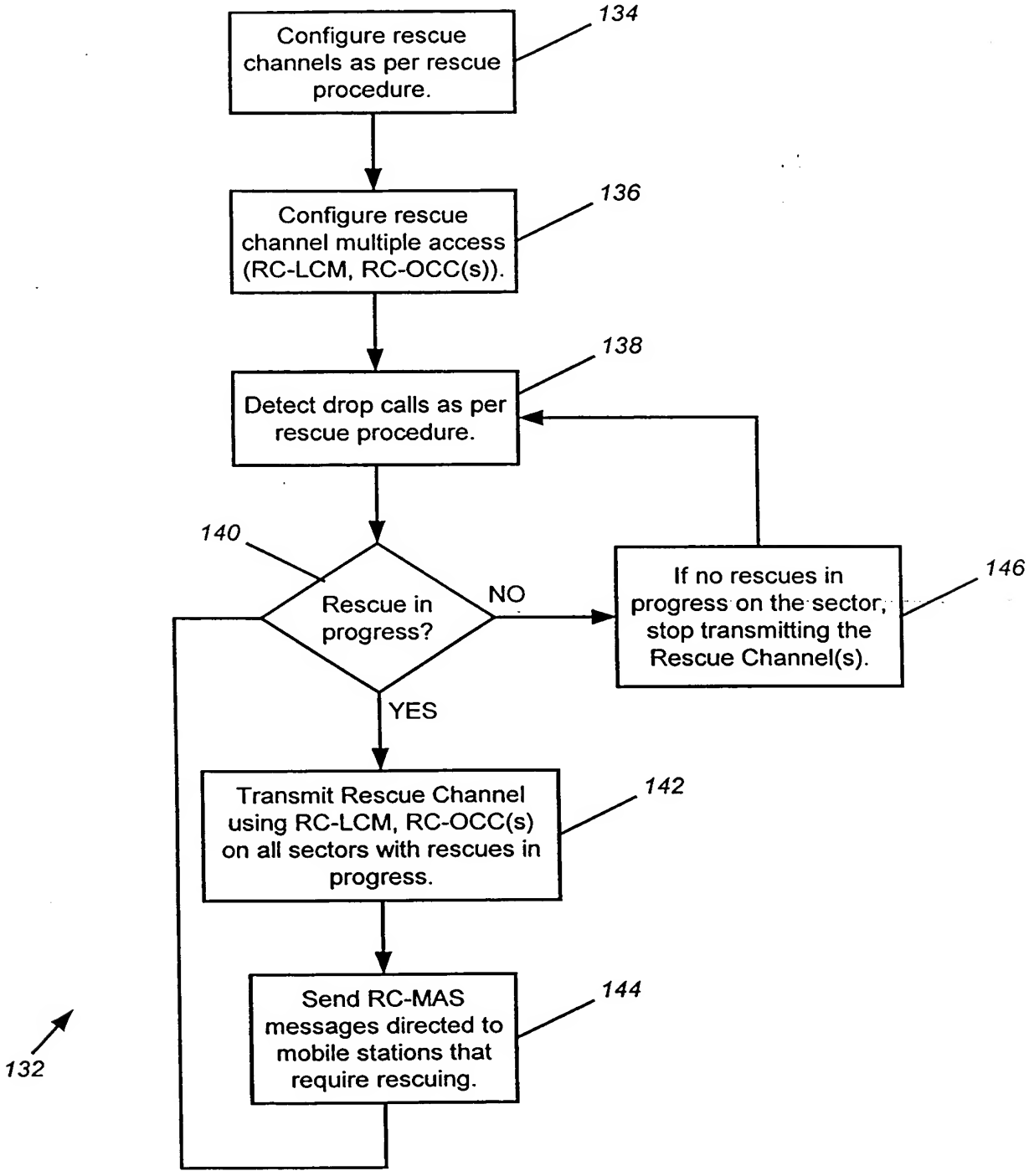
Configure rescue channels as per rescue procedure.
134
Configure rescue channel multiple access (RC-LCM, RC-OCC(s)).
136
Detect drop calls as per rescue procedure.
138
140
Rescue in progress?
NO
If no rescues in progress on the sector, stop transmitting the Rescue Channel(s).
146
YES
Transmit Rescue Channel using RC-LCM, RC-OCC(s) on all sectors with rescues in progress.
142
Send RC-MAS messages directed to mobile stations that require rescuing.
144
132

FIG. 12

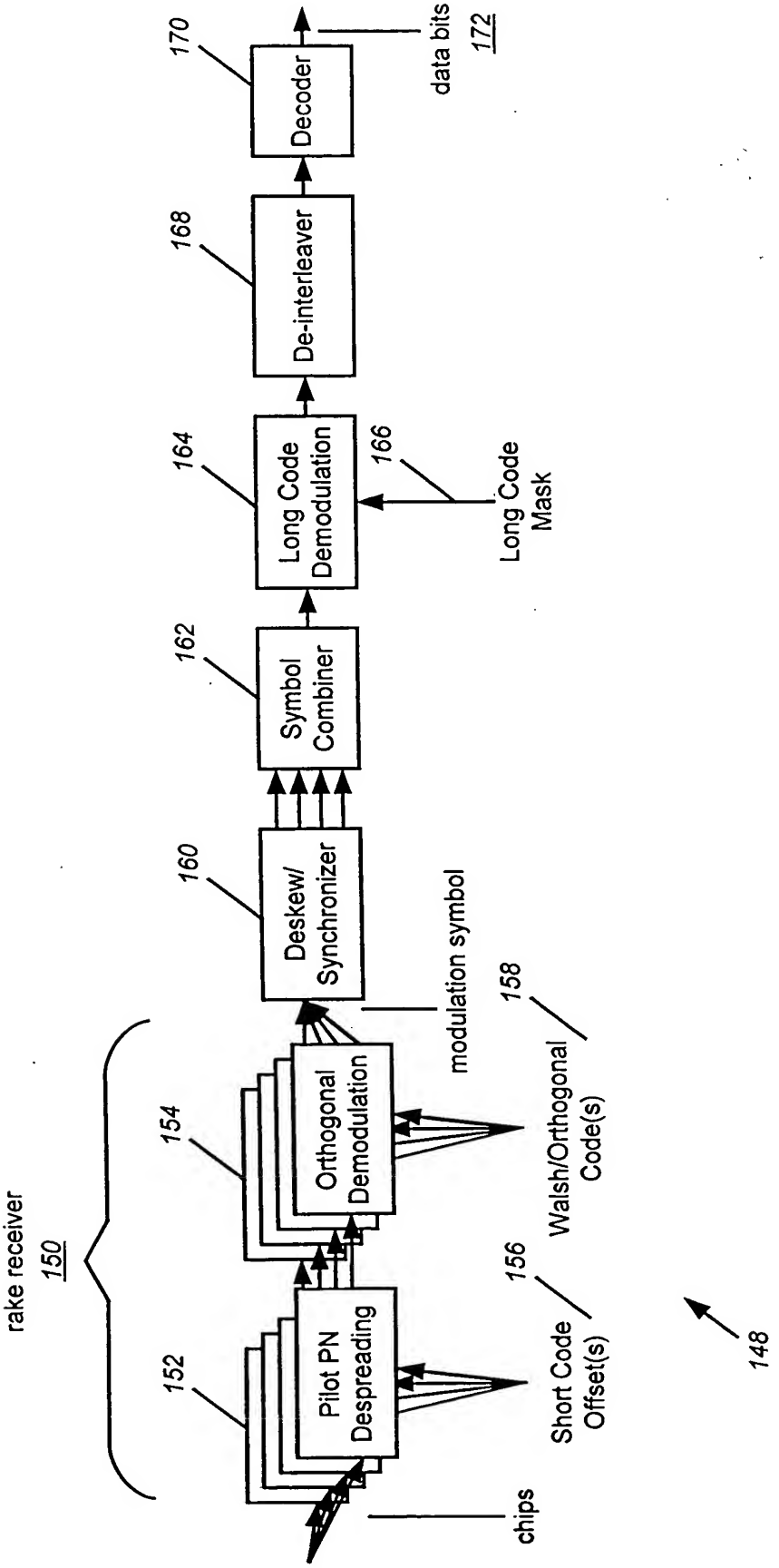
148
rake receiver
150
Pilot PN Despreading
152
Orthogonal Demodulation
154
Short Code Offset(s)
156
Walsh/Orthogonal Code(s)
158
chips
modulation symbol
Deskew/ Synchronizer
160
Symbol Combiner
162
Long Code Demodulation
164
Long Code Mask
166
De-interleaver
168
Decoder
170
data bits
172

FIG. 13

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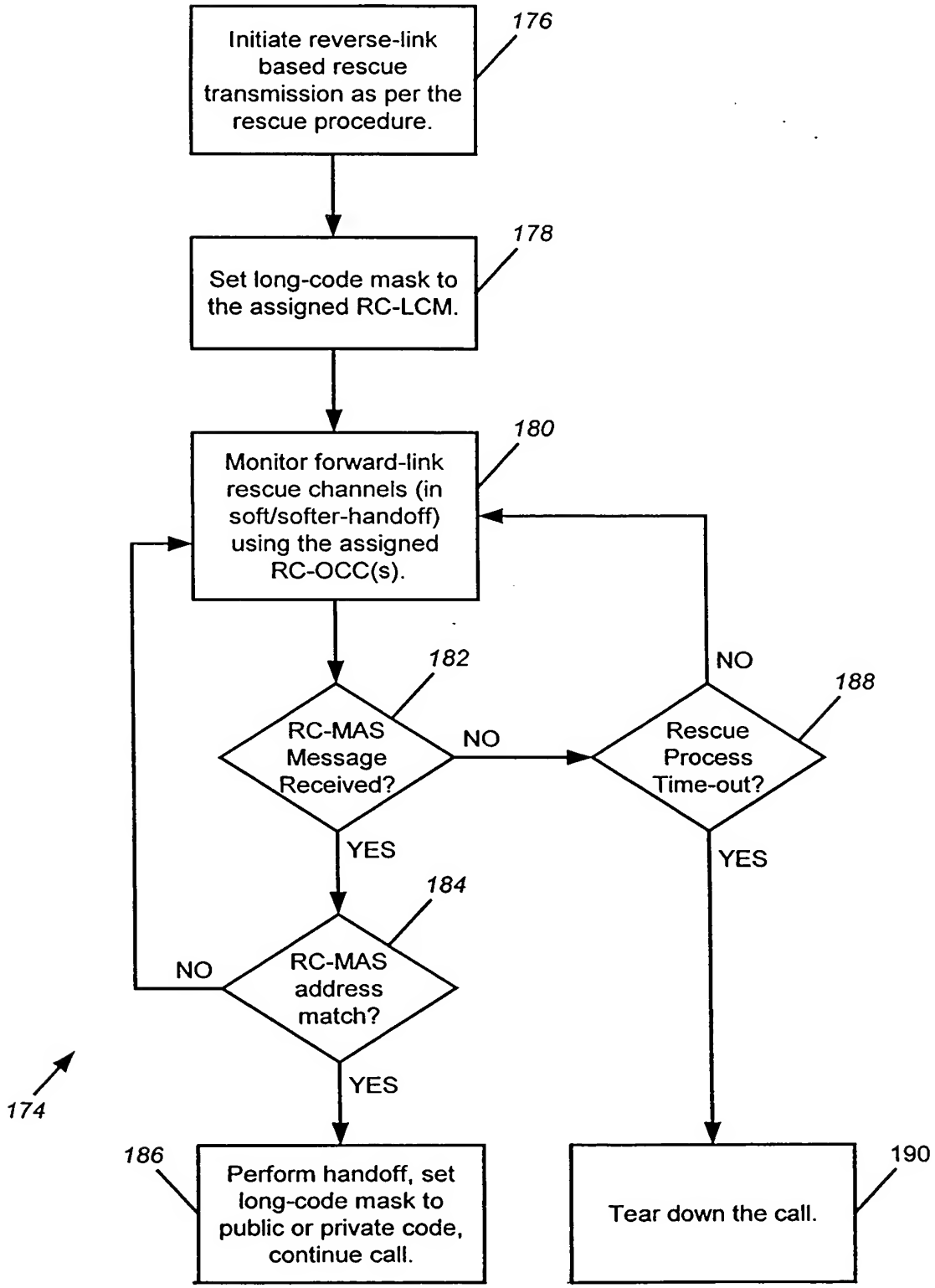
Initiate reverse-link based rescue transmission as per the rescue procedure.
176
Set long-code mask to the assigned RC-LCM.
178
Monitor forward-link rescue channels (in soft/softer-handoff) using the assigned RC-OCC(s).
180
RC-MAS Message Received?
182
NO
Rescue Process Time-out?
188
NO
YES
YES
RC-MAS address match?
184
NO
YES
174
Perform handoff, set long-code mask to public or private code, continue call.
186
Tear down the call.
190

FIG. 14

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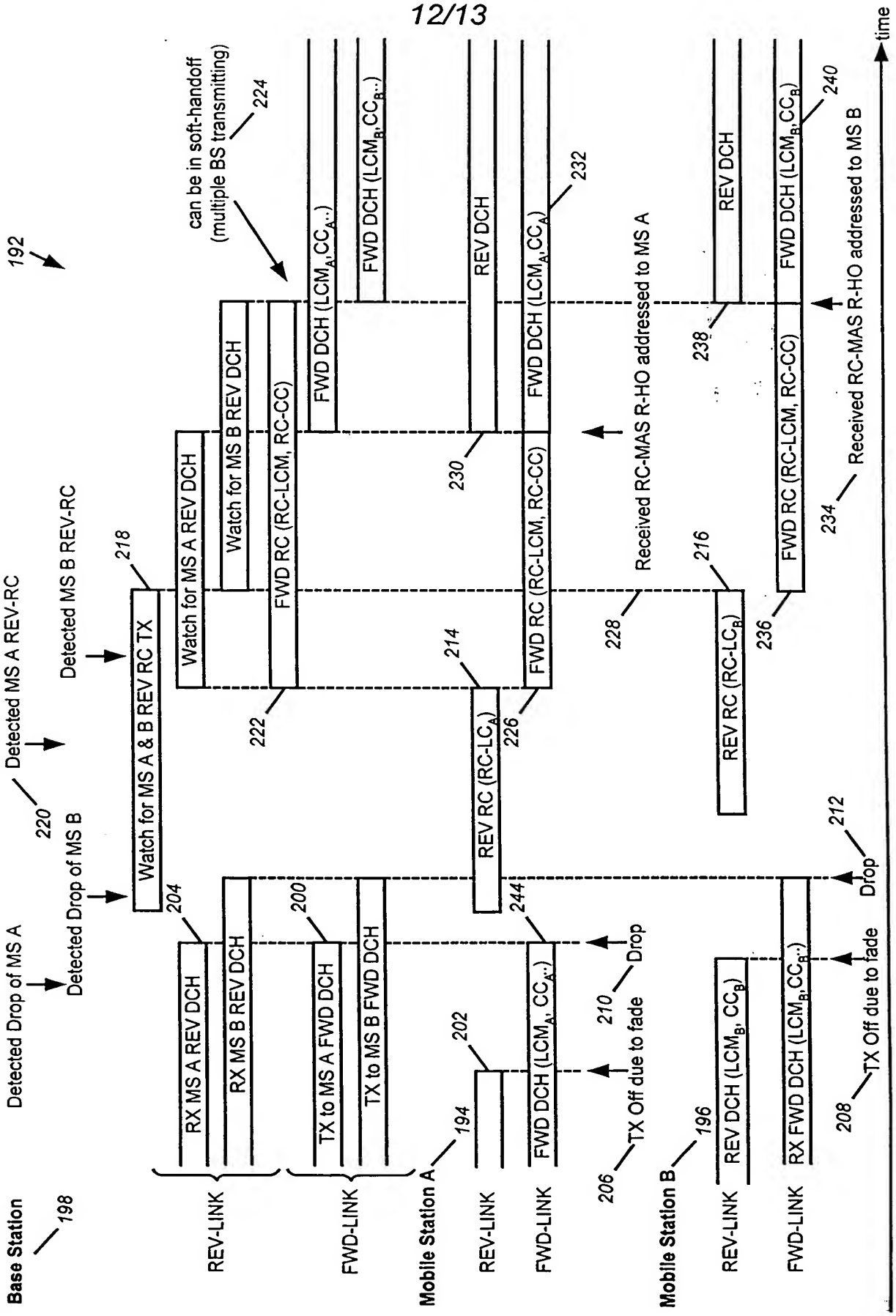
192
Base Station
198
Mobile Station A
194
Mobile Station B
196
REV-LINK
FWD-LINK
RX MS A REV DCH
RX MS B REV DCH
TX to MS A FWD DCH
TX to MS B FWD DCH
FWD DCH (LCM_A, CC_A..)
REV RC (RC-LC_A)
REV DCH (LCM_B, CC_B)
FWD DCH (LCM_B, CC_B..)
TX Off due to fade
Drop
Detected Drop of MS A
Detected Drop of MS B
Detected MS A REV-RC
Detected MS B REV-RC
Watch for MS A & B REV RC TX
Watch for MS A REV DCH
Watch for MS B REV DCH
FWD RC (RC-LCM, RC-CC)
REV RC (RC-LC_B)
REV DCH
FWD DCH (LCM_A, CC_A)
FWD DCH (LCM_B, CC_B)
FWD RC (RC-LCM, RC-CC)
can be in soft-handoff (multiple BS transmitting)
Received RC-MAS R-HO addressed to MS A
Received RC-MAS R-HO addressed to MS B
time
200
202
204
210
212
214
216
218
220
222
224
226
228
230
232
234
236
238
240
244

FIG. 15

EUDESU: SESUTUUT

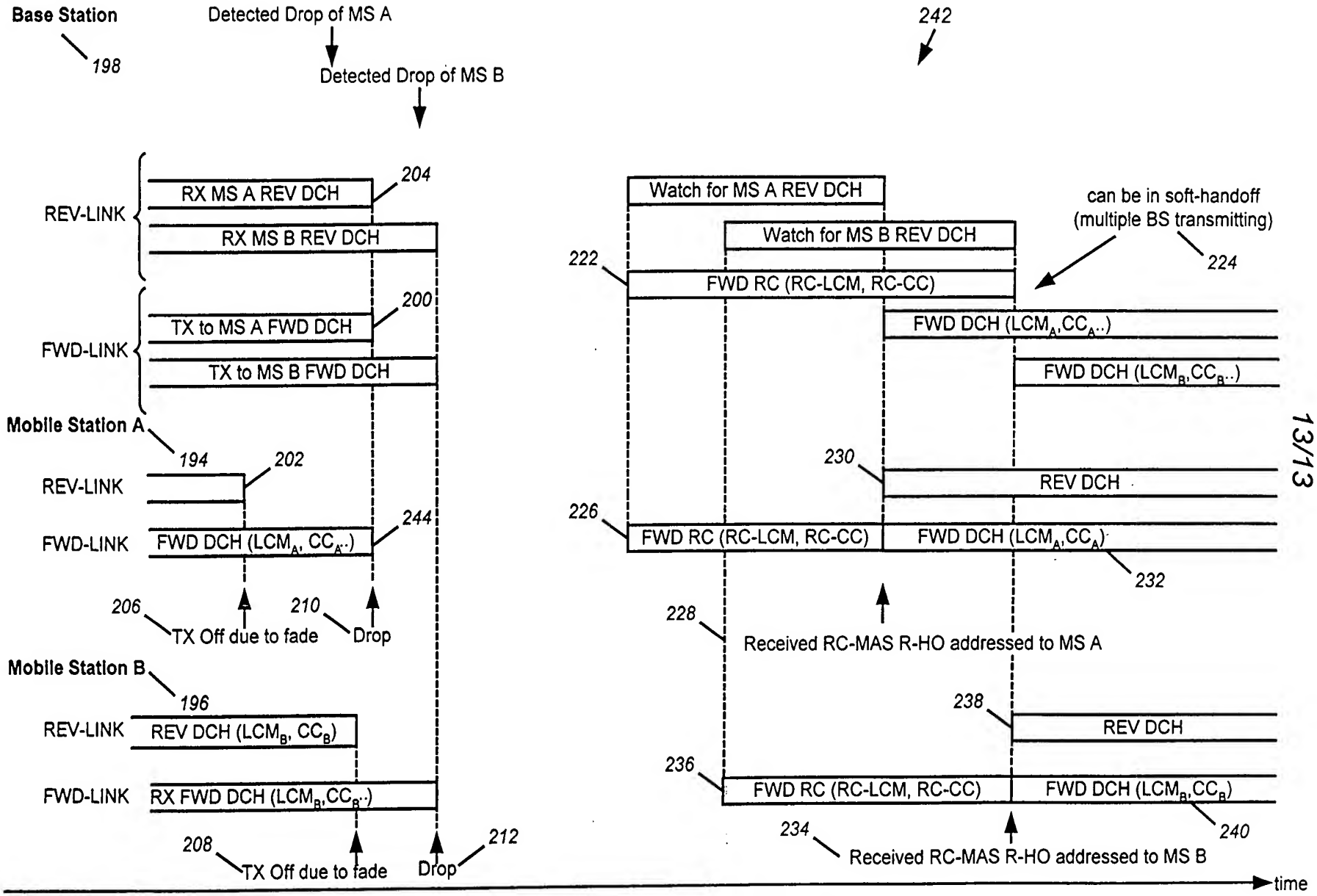

FIG. 16

Title: Minimum Interference Multiple-Access Method And System For Connection Rescue
Inventor: Jason F. Hunzinger
Application No.: 10/010,536
Docket No.: 440402000400
Sheet 13 of 13